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Abstract

Integrating e-procurement in hospitals' supply chain units has made it possible to conduct procurement practices effectively as compared to the manual methods of recording procurement and general conducting of procurement functions. However, the performance of hospitals in delivering high quality of services has reduced due to lack of an e-procurement system in some hospitals. Hospitals with e-procurement systems also face challenges. The purpose of the study was to establish the effect of e-invoicing practices on organizational performance. The study adopted the use of diffusion of innovation theory institutional theory to relate to the study. The study employed a descriptive survey of 5 hospitals. The sample size was 367 respondents. Questionnaires were the main types of data collection tools. The main findings of the study were as follows: In relation to e-tendering, the main findings of the study was that majority of the respondents strongly agreed that there is increased competitiveness in the tendering bid for the hospital. The result on inferential analysis was that e-invoicing is positively and significantly affecting organizational performance ($\beta = 0.805$; $P < 0.05$). The study findings will be of great significance to Uasin Gishu County Hospitals as it was deemed to shed light on how e-procurement practices could have affected the performance of the supply chain; to hospitals in other counties. The study recommended that the best models to be adopted when creating e-procurement practices systems relationship with suppliers and also emphasize the need to create the relationship models with the suppliers; to other future study and scholars, the study was expected to explain the concept of e-procurement practices and its impact on hospital performance while at the same time act as a basis for future research.

1. Background to the Study

E-procurement practices refer to the use of computer-internet based system to carry out individual or groups of the procurement process, including search, sourcing, negotiation, ordering, receipt, and post-purchase review (Wangui, 2013). The three types of e-procurement practices systems which are buyer e-procurement practices systems; seller e-procurement practices systems; and online intermediaries (Koorn *et al.*, 2001; cited in Barngetuny & Kimutai, 2015). There are various forms of e-procurement practices that concentrate on one or many stages of the procurement process, such as e-tendering, e-marketplace, e-auction/reverse auction, and e-catalogue (Nzuve & Chirchir, 2013). Purchasing accounts for the majority of organizational spending. As such, the advent of web-based electronic procurement has been heralded as a 'revolution' because of its potential to reduce the total cost of acquisition (Barngetuny & Kimutai, 2015). It is also expected to impact on the nature of supplier governance, either reinforcing market-based relationships or encouraging virtual hierarchies (Ombat, 2015).

In the global arena, it has become necessary for companies to provide their customers with a cost-effective total solution and better customer satisfaction with innovative ideas and methods. With the emergence of Information and Communication Technology (ICT) companies have been forced to shift their operation from the traditional style to e-Business, e-procurement practices, and e-Supply Chain philosophy in order to sustain themselves Real-time information about demand changes is required in order for the production process to maintain the desired replenishment schedules and levels. This model is most applicable to environments with stable demand

patterns, as is the case with a distribution of prescription medicine. The model indicates intermediaries when large systems are involved ((Barngetuny & Kimutai, 2015). According to Potter (2013) the main reason why organizations establish the use of e-tendering is to prevent bulky mechanism of doing business. That there used to be a very high inefficiency and bribes in States on tendering and thus, most states found it reasonable to establish e-procurement.

In Africa, combating corruption, and building capacity in procurement has helped governments maximise the buying power of their budgets and improve the quality of service delivery to their citizens especially the marginalised Hamisi, 2010). Competitive and transparent public procurement systems are seen as a key element to achieving sustainable development and more prosperous marginalised group in Africa (Onchweri, 2015). In Ghana, e-procurement system holistically tackles underlying issues affecting hospital performance such as lack of access to information for civil society partners and the public. In South Africa, the implementation of the Preferential Procurement Policy Framework Act 5 of 2000, gave effect to section 217(3) of the Constitution of the Republic of South Africa of 1996, by providing a framework for the implementation of a fair public preferential procurement policy. In relation to Knudsen (2010) Libya had become a large user of e-procurement in Africa. The main challenge that faced procurement was lack of issuing the correct and transparent invoice and payment documents.

In relation to this, continuous replenishment supply model has been integrated into hospitals in Kenya for supply chain management (Nzioka, 2010). The idea of the continuous replenishment supply chain model is to constantly replenish the inventory by working closely with suppliers and/or intermediaries (Kazi & Chirchir, 2012). The actual supply chain in hospitals supply chain model is focused on tracking customer demand in the production process and finished goods inventory efficiently. This integration is often achieved through the use of an information system that is fully integrated. Through an application of such a system, the organisation can receive the access to timely information that can be used to develop and modify production plans and schedules. This information is also integrated further down the supply chain to the procurement function so that the modified production plans and schedules can be supported by input materials (Barngetuny & Kimutai, 2015). The GoK report of 2015 revealed that Kenya was yet to overcome the challenge of paying contractors on timely basis even with the use of e-procurement in hospitals such as the Kenyatta National Hospital.

1.2 Statement of the Problem

Procurement functions were characterized by massive scandals and indignity that attributed to poor procurement performance and corruption (Thai, 2009, 2013). The lack of transparency in procurement process had made it impossible to give contracts. In hospitals within Uasin Gishu County, the capacity of the hospitals to achieve best supply deals was not giving the exact results and the process continued to deprive other suppliers a better chance to access the procurement services; due to lack of viable information about its procurement process. Payments were delayed when it came to service delivery and thus, hospitals were slow in delivering services as a result of timelessness in supply. Furthermore, the hospitals were ineffective in paying the suppliers due to late invoicing and delayed approvals for the supply of goods and services in hospitals inUasin Gishu County. It is due to these backgrounds that this study was undertaken to assess the effect of electronic procurement practices on performance of selected public hospitals in Uasin Gishu County, Kenya. The study ensured that information from hospitals with high rates of adoption of e-procurement and those with low levels of adoption of e-procurement were well investigated by making data collection instruments reliable through relevant questions that were generally suitable to meet the expected results for the study.

Research Objective

i. To assess the effects of e-invoicing on organisational performance in public hospitals within the Uasin Gishu County, Kenya.

1.4 Research Hypothesis

H_{02}: There is no significant relationship between e-invoicing and organizational performance in public hospitals within the Uasin Gishu County, Kenya.

2.0 Literature Review

Theoretical Review

Diffusion of Innovations Theory

The Diffusion of innovations theory was proposed by Rogers in 1962; referred to in Einstein (2008). According to Rogers, Diffusion of innovations theory is a theory of how, why, and at what rate new ideas and technology spread through cultures, operating at the individual and firm level.

Based on Diffusion of innovations theory at the firm level (Einstein, 2008) innovativeness is related to such independent variables as individual (leader) characteristics, internal organizational structural characteristics, and external characteristics of the organization. Individual characteristics describe the leader attitude toward change. Internal

characteristics of organizational structure include observations according to Rogers, centralization is the degree to which power and control in a system are concentrated in the hands of a relatively few individuals; complexity is the degree to which an organization's members possess a relatively high level of knowledge and expertise; formalization is the degree to which an organization emphasizes its members' following rules and procedures; interconnectedness is the degree to which the units in a social system are linked by interpersonal networks; organizational slack is the degree to which uncommitted resources are available to an organization; size is the number of employees of the organization". External characteristics of organizational refer to system openness.

In relation to the study, the ability of an organization to adopt relevant technology relies on the type of activity that requires the use of new technology. The adoption of e-procurement, in this case, depends upon the need to reform the key stages of the procurement process. According to Rogers (2008) the internal characteristics of organization structure centralization, complexity, formalization, interconnectedness, organizational slack and the number of employees. This relationship demands that a system to be put in place should meet the requirements of the organizations characteristic or operation of the procurement process. In this case, the procurement process is considered as an internal characteristic that deals with tendering, invoicing and payment. And thus, the adopted technology most considered for the performance of this task was e-tendering, e-invoicing and e-payment. Since technological adoption involves change in the performance of the institution, the dependent variable in this study was organizational performance.

Diffusion of innovation is a very difficult concept to quantify. This is because technological networks are complex. Measuring what exactly causes adoption of an innovation can take ages of analysis and several bits of the adaption change every hour of a study. The changing in technological test, upgrade, new innovations are so rampant in that they cause lag in establishing the right statistical review. Diffusion theories can never account for all variables, and therefore might miss critical predictors of adoption. This variety of variables has also led to inconsistent results in research, reducing heuristic value (Greenhalgh & Plsek, 2001).

Effect of E-invoicing on Organizational Performance

A study by Knudsen (2010) on Reinventing local governments and the e-procurement initiatives and whose main objective was to assess the role of e-invoicing on organization performance. The study had used a survey research design for selected public institutions in Kenya. The total respondents were 1345. The study findings were that: e-invoicing offered many benefits: significant cost reduction, process simplification, reduced payment time, greater security of data, as well as numerous environmental benefits. This was confirmed by enterprises and public authorities which already use it.

The finding of the study supported by Geldenhuy *et al*. (2005) who introduce the ability to deal with transaction costs and attempted to explain why individual corporations did not perform asset transformation themselves as a function of the transaction costs incurred in conducting such activities. As shown in transaction cost economics, the cost of the infrastructure is reduced per transaction when the volume of transactions increases (Mgidlana, 2013).

It was revealed that in order to create a financially viable e-invoicing solution, corporate needs to create this critical mass by a value network of alliance partners and technology solution providers to add the necessary desirability for electronic invoicing through the Financial Supply Chain. A Value Network is a web of relationships that generates economic value and other benefits through complex dynamic exchanges between two or more individuals, groups or organizations. The Value Network models mediating firms as creating value through three basic primary activities: network promotion and contract management; service provisioning; and infrastructure operations (Verna, 2008).

In addition to Verna 's findings in the previous paragraph; Nabtula (2009) revealed that customers were offered direct access to each other, as in payment mediation or indirect access to a common pool, as in saving and loan services through the set of mediation activities performed by the firm. Both value and cost are postulated as driven mainly by network characteristics. Value and costs depend on the number of access points (network size effects) nodes or users that can be reached (positive demand externalities) and the variety of links between users (services provided). To provide greater value, value networks can increase their range of services offered by layering new services on top of the contract set and the infrastructure(vertical expansion of service range) or increasing access to a larger pool of users (horizontal expansion of network scope) (Barngetuny & Kimutai, 2015). Buenger *et al.*, (2005) provide a framework of competing value drivers, indicating that organizations face different value propositions, which may change over time due to internal and external effect and experiences.

Conceptual Framework

The independent variable was e-invoicing which was measured by extra charges indicator, cost of procurement process and availability of transaction

information for goods and services. The independent variable was affected the dependent variable which is organizational performance. Organizational performance was in this study measured by quality of service, operational efficiency and number of complaints.

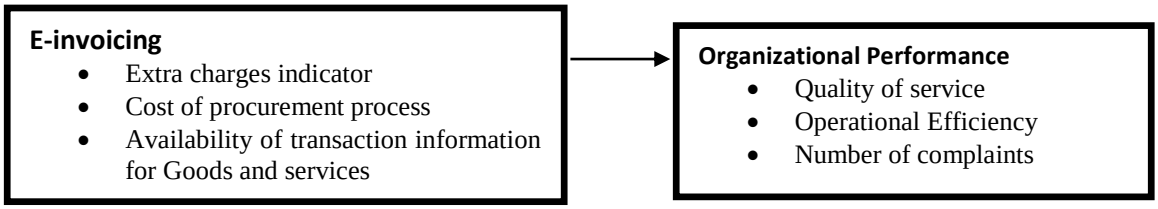

Figure 2.1 Conceptual Framework

3

.0 Research Methodology

Research Design

The study employed the use of descriptive survey research design. This implies to mean that the study was able to collect data from more than one organization and thus making the study to cover a wider scope in terms of geographical location and respondents. The choosing of a descriptive survey research design enabled the study to get information that was relevant with the happenings within the hospitals in relation to the content necessary for the study topic (Atkinson, 1996).

Target Population

The study targeted a total of 5 hospitals in the Uasin Gishu County. The hospitals included in the study were Moi teaching and referral hospital (MTRH) Turbo district Hospital, Huruma District Hospital, Uasin Gishu District Hospital and Ziwa Sirikwa District Hospital. The 4379 respondents of the study were in the departments of procurement and supply chain and management as the target population for the study (The County Governement of Uasin Gishu revenue file, 2016).

Sample and Sampling Techniques

This section presents sample size and sampling techniques.

3.3.1 Sample Size

The sample size for students was calculated based on Yamane's formula (Yamane, 1967).

$$n = \frac{N}{1 + N(e)^2}$$

Where;

n = Sample size;
N = Estimate of the population size;
e= the error of 5 percentage points.

The substitution effect of the Yamane's formula is as follows:

n= 4379/ [1+4379*0.05*0.05]
n= 367

Table 3.1: Sample Size

Respondents	Category	Target population	Sample size
Moi Teaching and Referral Hospital (MTRH)	Management staff	96	8
	Supply Chain staff	114	10
	Junior Employees	2447	205
Turbo district Hospital	Management staff	39	3
	Supply Chain staff	52	4
	Junior Employees	417	35
Huruma District Hospital	Management staff	40	3
	Supply Chain staff	68	6
	Junior Employees	310	26
Uasin Gishu District Hospital	Management staff	33	3
	Supply Chain staff	52	4
	Junior Employees	373	31
Ziwa Sirikwa District Hospital	Management staff	34	3
	Supply Chain staff	81	7
	Junior Employees	223	19
Total		**4379**	**367**

The sample size for the study was 367 respondents.

Sampling Techniques

The study used purposive sampling to identify the supply chain management staff. Purposive sampling was used as it enabled the study to give the respondents access to relevant information which was close to the subject of the study. This was because SCM staff was considered to be the most skilled and knowledgeable in dealing with the study. During sampling, the researcher was able to provide a list that the respondents filled with relation to their respective fields of work. The researcher used this list to allocate the highest offices that were targeted by the study. In cases where the highest staff in the list was not available, the study traced the second or third most important and relevant position to provide information.

The study also used simple random sampling to identify the management staff. The study adopted the use of simple random sampling procedure to acquire the number of junior staff in the hospital. The sampling techniques were advantageous as it gave all the respondents an equal opportunity to take part in the study. Using simple random sampling involved the researcher giving random numbers and picking the numbers that fit the sample size out of the entire population. This meant that the respondents with the codes the researcher identified were given a chance to participate.

Type of Data

The study used primary data. The data was collected by the study through the use of questionnaires.

Questionnaires

Structured questionnaires were be used to collect the required information for the study. The questionnaire consisted of Lickert scale types of questions from where the respondents will pick the responses on a scale of 5: Strongly Agree, 4: Agree, 3: Undecided; 2: Disagree; 1: Strongly Disagree. A few open-ended questions may also be availed in the questionnaire to support the Lickert scale questions.

Validity of Research Instruments

According to Neuman (2005) validity is the quality attributed to proposition or measures to the degree to which they conform to established knowledge or truth. An attitude scale is considered valid, for example, to the degree to which its results conform to other measures of possession of the attitude. Validity, therefore, refers to the extent to which an instrument can measure what it ought to measure. It refers to the extent to which an instrument asks the right questions in terms of accuracy. The study ensured the validity of the research instrument by discussing the data collection instruments with the supervisors and experts in study at the department prior to data collection process.

Reliability of the Research Instruments

Reliability aids in the design and evaluation of some scales, that is, scales that are made up of multiple individual measurements. The measurement of scale reliability was based on the correlations between the individual items or measurements that make up the scale, relative to the variances of the items (Cooper, 2006). The questionnaire tested reliability by using Cronbach alpha coefficient test to determine the internal consistency of the items. This was a method of estimating the reliability of test scores by the use of a single administration of a test. In this study, the items were considered reliable if they yielded a reliability coefficient of 0.70 and above. This figure was considered respectable and desirable for consistency levels (Cooper, 2006).

Data Analysis

After the collection of data, the study conducted data cleaning which involved the identification of incomplete or inaccurate responses which were then corrected to improve the quality of the responses. The data collected was then coded and entered into a computer for analysis using a Statistical Package for Social Sciences (SPSS) Version 22. The study produced both quantitative and qualitative data.

The study was guided by Gray's (2004) observation that qualitative data provides rich description and explanations that demonstrate the chronological flow of events as well as ready to change findings. On the other hand, quantitative data was analysed using inferential statistics; including correlation statistics and multiple regressions. In the study, the items were considered reliable if they yielded a reliability coefficient of 0.70 and above. T-test technique was used to determine the relationship between independent variables on the dependent variable. This involved measuring the relative influence of each independent variable to the dependent variable.. Once the relationship was estimated, it was possible to give the answers through the equation:

$$\mathbf{Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e}$$

Where: X represents the independent variables -

X_1 represents e-tendering
X_2 represents e-invoicing
X_3 represents e-payment

Y represents the dependent variable (Organizational Performance)

b represents the independent variable coefficients

e represents error margin

4.0 Presentation, Discussion and Interpretation of Results

Reliability Test

Table 4.1 Reliability Statistics

Variable	Number of Items	Cronbach's Alpha
E-invoicing	3	0.957
Organizational Performance	3	0.952

The reliability test presented 0.987 on e-tendering, 0.957 on e-invoicing, 0.931 on e-payment and 0.952 on organizational performance. All the cronbach's alpha results were higher than the recommended 0.7. This implied that all the results presented in accordance with the questionnaires were reliable. This implied that the questions the study presented were easy to understand, there was less error and that the study corrected the errors that existed in the research instruments during the pilot study suggested in the proposal.

Demographic Information of the Respondents

The study assessed the background information of the respondents in an effort to ensure that sampling was effectively done. The study sort to establish the gender composition, age bracket of the respondents, level of education and working experience of the respondents. The incorporation of background information into the study was to show that the study was able to give a representation of the diverse population under the study. The study also sought to examine the demographic characteristics associated with the respondents so as to ascertain that the methodology employed was not bias based on any of the demographics of the respondents.

Response Rate

The study was able to administer a total of 367 (100%) questionnaires but only 321 questionnaires were returned. This means that the study had 87.47% response rate.

Gender of Respondents

The study collected data from both genders; this was essential since it enabled the study eliminating any gender bias. The results obtained were then presented in Table 4.1.

Tables 4.2 Gender of the Respondents

Gender	Frequency	Percentage
Male	190	59
Female	141	41
Total	**321**	**100**

The study findings revealed that 59.0% (190/321) of the respondents were male and 41.0% (141/321) of the respondents were female. This implies or means that the study was able to minimize the influence of gender biases by collecting data across all genders. Despite there being a slightly high number of males as compared to their female counterparts, the study was able to identify and convince both genders to take part in the study. This was meant the data collected represented the opinions of both genders and hence was not biased despite the disparities in the distribution which indicated that there was slightly more male than female owing to the occupation of the respondents.

Age of the Respondents

The study aimed at collecting data from different age groups of respondents so as to avoid bias in terms of age. Hence it was important to collect data across the different age groups. The findings were then represented in Table 4.2.

Table 4.3 Ages of Respondents

Years	Frequency	Percent
18-25	28	9
25-30	96	30
35-40	138	43
Above 40	60	19
Total	**321**	**100**

The study results indicated that majority of the respondents were aged between 35-40 years which had 43.0% (138/321) of the responses and the lowest number of respondents (9%) (28/321) was in age bracket between 18-25 years. 30% (96/321) of respondents were aged between 25-30 years. Finally, 19% (60/321) of the respondents were aged above 40 years. The study was able to avoid bias in

terms of age groups by collecting data across the different age groups. This was essential as it meant that the data collected represented the opinions of different respondents of different age groups hence no biases in terms of age.

Level of Education

Data from respondents of different levels of education was collected. The findings were then presented in Table 4.3.

Table 4.4 Respondents' Level of Education

Level of Education	Frequency	Percentage
Certificate	10	3
Diploma	32	10
Degree	144	45
Masters	69	21
PhD	45	14
Others	21	7
Total	**321**	**100**

The findings were that 3% (10/321) of the respondents had certificate level of education. 10% (32/321) of the respondents stated that they had acquired diploma education as their highest level of education. 45% (144/321) of the respondents had acquired a university Degrees as their highest level of education. 35% (114/321) of the respondents stated that they had acquired Masters or Doctorate as their highest level of education. Finally, 7% (21/321) of the respondents also indicating that they held other types of educational credentials which they did not specify.

Working Experience

The study collected data from respondents of different categories based on working experience. The findings were then presented in Table 4.4.

Table 4.5 Working Experience of the Respondents

Working Experience	Frequency	Percentage
Less than 5 years	63	20
5-10 years	111	35
10-15 years	101	31
More than 20 years	45	14
Total	321	100

The findings on the respondent's experience indicate that a majority; 35% of the respondents which represents (111/321) people had worked in the hospital for a period of 5-10 years. 20% (63/321) of the respondents had worked for a period of fewer than 5 years. 31% (101/321) of the respondents had working experience between 10-15 years. Finally, 14% (45/321) of the respondents stated that they had worked for a period of over 20 years.

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Specific Information

This section presents data collected from respondents based on the objectives of the study.

E-Invoicing

Data was sought to investigate the extent to which e-invoicing affected organizational performance in public hospitals within the Uasin Gishu County, Kenya. The responses were as presented in Table 4.7

Table 4.8 Respondents opinion on e-invoicing

Statement		SA	A	U	D	SD	T
The adoption of e-invoice is able to make extra charges indications from purchasers to suppliers	F	234	26	19	26	16	321
	%	73	8	6	8	5	100
There are secure and low-cost procurement transactions	F	193	32	19	32	45	321
	%	60	10	6	10	14	100
Reliability of service delivery has increased through availability of transaction information for Goods and services	F	200	51	19	51	0	321
	%	62	16	6	16	0	100

Regarding the effect of e-invoicing on the performance of hospitals, majority 73% (234/321) of the respondents stated that the adoption of e-invoice is able to indicate charges from purchasers to suppliers. 26% (8/321) of the respondents agreed, 6% (19/321) of the respondents were undecided, 8% (26/321) of the respondents disagreed and 5% (16/321) of the respondents strongly disagreed to the statement. 60% (193/321) of the respondents also revealed that there are secured and low-cost procurement transactions. 10% (32/321) of the respondents agreed, 6% (19/321) of the respondents were undecided, 10% (32/321) of the respondents disagreed and 14% (45/321) of the respondents strongly disagreed with the statement. Finally, 62% (200/321) of the respondents indicated that the adoption of e-invoice is able to make extra charges indications from purchasers to suppliers. 16% (51/321) of the respondents agreed, 6% (19/321) of the respondents were undecided, 16% (51/321) of the respondents disagreed and 0% (0/321) of the respondents strongly disagreed with the statement.

The highest response was that the adoption of e-invoice is able to indicate charges from purchasers to suppliers. This was meant majority of the hospitals conduct operations based on information regarding the tenders that the hospitals conduct; meant the number of hospitals in the area that apply the use of e-tendering systems is greater than those that do not have e-procurement process; meant most hospitals in the Uasin Gishu County prefer to make extra charges based on changes in the cost of goods and services.

The hospitals in the area also prefer to use e-invoicing to give dates for payments so as to plan for the payment period every year.

The most selected option on e-meant invoicing was that the hospitals use e-invoicing to reduce the cost of labor for the delivery of hard files as an invoice to destined suppliers and partners. The preference in the use of e-invoicing has is also justified by its ability to reduce time wastage as many hospitals maintain timely invoice delivery for them to plan payments to suppliers. The benefit of using e-invoicing is that hospitals in the Uasin Gishu County that is using e-invoicing has reduced the cost of creating hard copies.

It also revealed that hospitals which lack e-invoicing systems could be incurring high operational cost in the procurement process as compared to the hospitals that do have e-procurement systems. This implies to mean that hospitals that lack e-invoicing systems tend to have challenges which include lack of transparency in issuing of invoices as individuals in position at the procurement department could over quote expected payments with intentions of corrupting the system to suit their personal interest.

The fact that the majority of the respondents agreed that the adoption of e-invoice is able to make extra charge indications from purchasers to suppliers was meant e-invoicing has a great significance in institutional operation. The ability to reduce payment time, greater security of data, as well as numerous environmental benefits has made E-invoicing to be more applicable in the hospitals operating in the county. This was confirmed by enterprises and public authorities which already exist; meant cost economics has been streamlined with the cost of the infrastructure having been reduced per transaction when the volume of transactions increases. If there were no cost-cutting in the supply chain and procurement, there would have been a lot of stress encountered by the hospital

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Table 4.9 Simple Regression model

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.988[a]	.975	.975	.19552

a. Predictors: (Constant) E-invoicing

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	482.659	1	482.659	12626.083	.000[b]
	Residual	12.194	319	.038		
	Total	494.854	320			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant) E-invoicing

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.034	.019		1.789	.075

E-invoicing	.975	.009	.988	112.366	.000

a. Dependent Variable: Organizational Performance

In the model summary portion, 0.975 was the result of the model which meant that 97.5% of the independent variable was used to explain organization performance.

Organizational Performance F (1, 319) = 0. 034 + 0.975 (e-invoicing) + 0.019 (Error Margin). A multiple regression was run to predict organizational performance from e-invoicing. The single variable's significant relationship to organizational performance was statistically predicted as follows: F (1, 317) = 12626.083, $P < 0.05$, R^2 = 0. 975. E-invoicing added statistically significantly to the prediction.

Organizational Performance

The study assessed the level at which Uasin Gishu County hospitals were performing in the supply chain management practices. The responses were then presented in Table 4.11.

Table 4.12 Respondent's opinion on performance of hospitals

Statement		SA	A	U	D	SD	T
The system has improved the speed of service with consideration to the amount of work in selecting the right supplier	F	219	21	81	0	0	**321**
	%	68.1	6.5	29.5	0	0	**100**
The hospital has reduced cost of operation through the use of e-procurement practices	F	224	28	0	42	27	**321**
	%	69.9	8.6	0	13.1	15.2	**100**
There are less complaints from stakeholders and customers	**F**	**196**	**28**	**23**	**28**	**46**	**321**
	%	**61**	**8.6**	**7.2**	**8.8**	**18**	**100**

Based on the performance of hospitals, 69.9% (224/321) of the respondents stated that the hospital has reduced the cost of operation through the use of e-procurement practices. 6.5% (21/321) of the respondents agreed, 29.5% (95/321) of the respondents were undecided, 7.9% (25/321) of the respondents disagreed and 17.1% (55/321) of the respondents strongly disagreed to the statement.

68.1% (219/321) of the respondents indicated that the system has improved the speed of service with consideration to the amount of work in selecting the right supplier. 8.6% (28/321) of the respondents agreed, 0% (0/321) of the respondents was undecided, 13.1% (42/321) of the respondents disagreed and 15.2% (49/321) of the respondents strongly disagreed with the statement.

Finally, 61% (196/321) of the respondents also gave the opinion that there are fewer complaints from stakeholders and customers. 8.6% (28/321) of the respondents agreed, 7.2% (23/321) of the respondents were undecided, 8.8% (28/321) of the respondents disagreed and 18% (58/321) of the respondents strongly disagreed with the statement.

The finding's interpretation was that hospitals that use e-procurement have less cost of operation as compared to hospitals that do not have e-procurement systems. In relation to organisational performance; meantthat e-procurement enables hospitals to decentralise operational procurement processes and centralise strategic procurement processes as a result of the higher supply chain transparency provided by e-procurement systems. That hospitals use e-procurement for internal processes efficiencies and automation is seen to be key drivers for increasing process efficiency.

In relation to the cost of operation, interpretations were that internal process efficiencies and automation are seen to be key drivers for increasing process efficiency in the delivery of service. The integration of e-procurement in the hospitals could be the cause of increasing quality of service due to prompt supply and payment of goods. The use of e-procurement has improved the selection of suppliers to provide the hospital with goods and services.

On determining if all the variables on e-procurement (independent variable) and there significant relationship to organizational performance (independent variable) where T-test indicating how the variables interacted. The findings are represented in (Table 4.13).

Table 4.17 T-test analysis

Model Summary					
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**	
1	.989[a]	0.979	0.978	0.18275	
a. Predictors: (e-invoicing)					
ANOVA[b]					
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	484.275	3	161.422	4833.390	.000[b]
	Residual	10.587	317	0.033		
	Total	494.854	320			
a. Predictors: (Constant) E-Invoicing						
b. Dependent Variable: Organizational performance						
Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.54	0.20		2.674	0.008
	E-invoicing	0.794	0.029	0.805	27.707	0.000
a. Dependent Variable: Organizational Performance						

In relation to the model summary, the independent variable data that was used to explain the dependent variable was 97.9% this was a very high amount of data and thus, the independent variable was able to form a more linear relationship with the dependent variable.

Organizational Performance F (3, 317) = 0.54 + 0.316 + 0.794 (E-invoicing) + 0.20 (Error Margin). A multiple regression was run to predict organizational performance from e-payment, e-invoicing, e-tendering. The variables significant relationship to organizational performance were statistically predicted as follows: F (3, 317) = 4833.390, $P < 0.05$, $R^2 = 0.979$. All three variables added statistically significantly to the prediction.

The organizational performance of hospitals depends on the implementation of e-procurement. The adoption of e-invoicing such as competitiveness, level of accessibility and cost of tendering process will increase the performance of the hospitals in the Uasin Gishu County.

Hypotheses Testing

From the regression model computed in table 4.10 above, the research hypotheses were tested using the significance level of the coefficients; the study aimed at testing the hypotheses with an aim of accepting whether there was any effect between the independent variable and the dependent variable in the study. The research hypotheses for the study included;

The Hypothesis H_{01}, stated that there is no significant relationship between the organizational performance and e-invoicing. The result were positive and significant (β=+0.805; P<0.05). The regression results showed that e-invoicing had a significant effect on organizational performance. The hypothesis result was supported by Matilda (2009) that improvement in organizational performance of the hospitals as a result of investments on e-invoicing. According to the interpretations made on the findings of the study, e-invoicing is the most efficient element in the procurement process to enable the procurement

department realizes faulty payments or misquoted budgets. Thus e-invoicing affects organizational performance.

The result of the study was opposed by Knudsen (2010) that the level of using invoices was majorly based on the fact that suppliers were required to visit the public hospitals for the collection of invoices. That collection of invoices was less done through email and more manual labor was involved including the printing and submission of invoices for suppliers to present for payment. Palmer et al., (2010) revealed cases of delayed detection of suppliers and release of the invoices. This led to the decline in payments and thus a poor relationship between the supplier and the providers.

Discussion of the Key Findings

The study findings indicated that the effect of e-invoicing on the performance of hospitals, 73% (234/321) of the respondents stated that the adoption of e-invoice is able to indicate charges from purchasers to suppliers.

This finding is in support of the study conducted by Stabell and Fjeldstad (1998) which states that both value and cost are postulated as driven mainly by network characteristics. Value and costs depend on the number of access points (network size effects) nodes or users that can be reached (positive demand externalities) and the variety of links between users (services provided). The costs for the users are in terms of charges for access to and use of the network, while the value is determined by the possibility to reach a large and relevant number of nodes through a variety of links. To provide greater value, value networks can increase their range of services offered by layering new services on top of the contract set and the infrastructure(vertical expansion of service range) or increasing access to a larger pool of users (horizontal expansion of network scope).

Additionally, the concept of e-invoicing and e-payment were established with regards to the diffusion theory. Given that the main finding was that the adoption of e-invoice was able to indicate charges from purchasers to suppliers and e-payment made it cheap to promptly pay suppliers on supply delivery due to fewer charges incurred upon sending money through e-banking systems.

The theory was relevant in that monitoring of transactions, data security and cost reduction were major evidences and reasons behind technological diffusion. Thus, the study was able to identify the aspects of the theory that there is need to consider how, why and what rate new ideas and technology spread.

5.0 SUMMARY, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

Summary of the Findings

E-invoicing

Based on e-invoicing, most responses stated that the adoption of e-invoicing was able to indicate charges from purchasers to suppliers. This implied that e-invoicing has no significant relationship with organizational performance. The results of the T-test were positive and thus proving that there was a significant relationship between e-invoicing and organizational performance.

Recommendations

Based on e-invoicing, the study recommends that all hospitals should automate the practice of invoicing so as to promote transparency and record management since it was easier to track records

Areas for Further Studies

There is need to conduct future studies on the role of e-procurement adoption processes on organizational performance. This will enable future study improve the adoption of e-procurement in all sectors as their studies will provide insight on adoption strategies and their determinants.

Future researchers should do more studies on the impact of e-procurement implementation strategies on service delivery in public institutions. This will improve in the knowledge required for implementing e-procurement strategies in public hospitals. The reason for this recommendation in public hospitals was based on the idea that public hospitals are less competitive. Thus, more research will increase knowledge on competitive advantage of using e-procurement.

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